upon *P. strictum* R. Br. The general recognition of *P. strictum* R. Br. as the nomenclatorial basis of a variety does not, as Hubbard seems to infer, render that name "an earlier homonym which is universally regarded as nonvalid" (Art. 50).

P. BOREALE Nash. Abundant in damp or dryish situations throughout the province.

** P. SPRETUM Schultes. Boggy savannahs and peaty, sandy or gravelly upper borders of lake-beaches, eastward to Halifax Co.; sixteen collections from the following stations. DIGBY Co.: Cedar Lake. YARMOUTH Co.: Cedar L.; Beaver L.; Porcupine L., Arcadia; large lake north of Saller L., Kemptville; Fanning L., Carleton; Tusket (Vaughan) L.; Butler's (Gavelton) L., Gavelton; St. John L., Springhaven; Kegeshook L.; Sand Pond. Argyle; Great Pubnico L. HALIFAX Co.: Shubenacadie Grand Lake. See pp. 99, 101, 102, 141.

(*To be continued.*)

A NEW STATION FOR POGONIA AFFINIS.

E. JEROME GRIMES.

JUNE 1st, 1920, I was lucky enough to find three flowering specimens of that rare, interesting, and much discussed orchid, *Pogonia affinis* Austin, while making a hurried trip through some woods west of Williamsburg, which is situated on the coastal plain about 30 miles west of Norfolk, Virginia. This year the same station was visited the beginning of the second week in May and, by diligent searching throughout the afternoon, fifteen plants each consisting of a flowering shoot were observed. The difference in flowering dates is due to the season, which was three weeks to a month earlier in 1921.

The habitat is a flat dry hardwood on a gently undulating interstream area. The soil is a well drained gray fine sandy loam over a yellowish sandy clay or clay. The vegetation consists chiefly of white oak, beech, tulip and chestnut with a few scattering Loblolly pines, and an abundance of flowering dogwood. The undergrowth is very sparse and the Pogonias were found scattered over an area of about ten acres, occurring either singly or in open groups of two to four plants.

A composite soil sample of the habitat was tested and found to be practically neutral to Brom Thymol Blue, and soil shaken from the

roots of the orchids gave approximately the same reaction. The Pogonias were found in more or less clear spaces in the woods and their roots were always intertwined with decaying organic matter in which the fibres of the plant remains were distinguishable.

Out of the fifteen plants observed, five bore two flowers each, and two plants with solitary flowers had two capsules on the old stem persisting from last year. The maximum and minimum dimensions of the various organs were measured in thirteen plants and are as follows:

Organ	*Dimension*	*Maximum*	*Minimum*	*Mean*
Stem: from root to leaves.	Height	20.0 cm.	9.5 cm.	17 cm.
Leaves	Length	5.8 cm.	2.7 cm.	4.4 cm.
	Width	3.0 cm.	1.1 cm.	2.1 cm.
Ovary and Peduncle	Total Length	2.0 cm.	1.4 cm.	1.6 cm.
Peduncle of old capsule	Length	1.3 cm.	0.8 cm.	1.0 cm.
Capsule	Length	2.7 cm.	1.7 cm.	2.0 cm.
	Width	1.0 cm.	0.8 cm.	0.9 cm.
Sepals	Length	2.3 cm.	1.7 cm.	2.0 cm.
Petals	Length	1.7 cm.	1.3 cm.	1.6 cm.

The orchid is very distinct from the larger whorled Pogonia, *P. verticillata*. *Pogonia affinis* is more delicate in habit and of a much paler green. One of its most noticeable features in the field is the fine bloom which covers the stem and leaves but rubs off very easily when the plant is handled. A slight bloom has been observed on the stem of *P. verticillata* but not on the leaves. The whorl of five leaves in *P. affinis* is close to the base of the ovary so that the short peduncle is not distinguishable to the eye, and all the leaves assume a slightly drooping position, making an angle of about 45 degrees with the stem. All the leaves observed tapered at the apex considerably more than is indicated by the drawing in the Illustrated Flora. No plants were observed to bear a sterile whorl of leaves as is common with *P. verticillata*. The flowers of *Pogonia affinis* are a pale yellowish green when young and some quite yellow when fully mature. The lip however, is almost white and is crested over the whole face and lobes with pale green. After fertil zation the short peduncle

elongates to about one centimetre. The young ovary is distinctly ribbed, while the ripe capsule is six angled and three ribbed and dehisces by lateral longitudinal splits on either side of the ribs. At the base of the stem at soil level there are four to five small pointed brown membranous bracts. Time did not permit of prolonged observation and no insect visitors were observed.

In this station *P. affinis* is associated with two other orchids, *Liparis liliifolia* and *Microstylis unifolia*. The flowering period of the former pretty well coincides with that of the Pogonia, as it was found in flower June 1, 1920, and by May 5, 1921. The flowering period of the Microstylis is slightly later and this plant is found also in pine woods on acid soils.

There is no possibility of confusing the two species of Pogonia and there are no intergrading forms, they are not even associated in the field. *P. verticillata* is the larger and more robust orchid, the plant has a reddish tinge and the leaves stand out approximately at right angles to the stem, they are also thicker. Further, the long purplish brown sepals of the Whorled Pogonia are very striking and distinctive.

It is certain that, time permitting a more continued search would have revealed many more plants of this rare orchid in the same area, as those observed all seemed well established and several bore last year's fruiting capsule on a dead shoot. So far no trace of the plant has been found in any other part of this region although the closely related *P. verticillata* is common here and widely distributed, but it does not occur in the *P. affinis* area. *P. verticillata* prefers soils that are medium acid to methyl red, and although it occurs on the borders of flat, dry, pine-oak woods, it does best on the lower edge of wooded slopes bordering the flood plains of streams, and in this habitat it is often associated with *Medeola virginiana*, the young plants of which might at first be mistaken for the orchid.

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